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2 PARTS — PART 2

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Washington Monument

PROBABLY no single "work of man" in this country inspires a deeper feeling of reverence than does Washington Monument. Those who have seen it once are impressed; but to those privileged to view it often its symmetry and simplicity make it almost holy.

Revered though it is to-day, Washington Monument, in the long interval between conception and consummation, passed in both its history and its structure successively from an auspicious start, through criticism and doubt, to delay and almost to abandonment, until by careful analysis and patient endeavor there was developed a broader, firmer basis whereon with confidence was permitted to rise a glorious success.

At the close of the Revolutionary War the Continental Congress, in 1783, desiring to honor Washington, authorized an equestrian statue to be erected at the place where the seat of Congress should be established. L'Enfant, in his plan for the city of Washington, provided for its location, but the statue was not built and it was not until 50 years later that a body of influential citizens of Washington caused themselves to be organized into the Washington National Monument Society and undertook to secure contributions for a suitable memorial of the Father of His Country.

In this way they were successful, to a degree, collecting approximately $88,000. In 1848 having secured authorization from Congress, they made a start.

The site indicated in L'Enfant's plan was at that time a marsh, but a mound only a few hundred feet distant proved alluring and, being selected, the corner stone was laid on July 4, 1848. In the meantime an imposing shaft instead of an equestrian statue had been decided upon.

Contributions of stones were solicited from societies, States, municipalities, and individuals. Several stones bear inscriptions indicating that they were presented by the volunteer fire companies that existed then in almost all cities. One stone at the 60-ft. landing bears the inscription "Presented by Anacostia Tribe, No. 3, I. O. R. M., D. C. on the 3d Sun of the 3 x 7 Suns Worm Moon G. S. 5610." Another at the 90-ft. level reads: "From the Mechanics of Raleigh, N. C." At the 190-ft. landing are stones contributed by Turkey, Siam, Greece and other countries. Almost every State of both North and South sent its stony contribution.

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Stevens at Panama

IN his Annual Address, given at the Convention at Denver, President Stevens discussed quite intimately his connection with the Panama Canal, of which he was Chief Engineer for two years.

The address appears in full in Part I of this Proceedings. It will have interest to all engineers—and others too, for it touches on a variety of topics; but especially to the great number of members who helped in all sorts of ways, from humble to great, in "digging the ditch".

Change in Policy and Personnel

PARTICULAR attention is called in the "Items of Interest," Part I, to the changes instituted with this August issue of Proceedings.

Papers have accumulated to such an extent that two volumes of Transactions will be issued this year, the second volume probably in November next.

It is not contemplated issuing two volumes of Transactions in any one year hereafter, however. Rather, by limiting the number of those papers to be reprinted in Transactions, which has more the character of a reference volume, a saving may be made and applied to enlarged volumes of Proceedings thus broadening the field of what may be described as papers of a more current value.

Just what papers are to be reprinted it is impracticable to decide in advance. It behooves members, therefore, either to retain for a time their Proceedings or if a particular paper makes an especial appeal as a reference, to separate the volume by loosening the staples.

That this may the more readily be done only two staples are used (over the binder's protest, by the way) and each paper is begun on the right hand page. Care will be taken to see that blank left hand pages shall be reduced to a minimum but where they occur the reason therefor will be appreciated.

Not only are the Technical Divisions providing more papers desirable for distribution to those members unable to be present at the meetings when the papers are read but an increasing volume of valuable papers is coming in, unsolicited, from individuals.

All of which, of course, means

more work for the editorial staff, which has been augmented in the person of Harold T. Larsen. Mr. Larsen, an Associate Member of the Society, was taken away from the University of Illinois where he was an Instructor in the Civil Engineering Department.

Of this loss to the University, Dean Ketchum, formerly Vice-President of the Society writes: "An important part of our work in the College of Engineering of the University of Illinois is to train men for better positions either in the University or elsewhere."

August Proceedings

THE imposing-looking August number of *Proceedings* is begun fittingly with the Annual Address of President Stevens on "The Panama Canal." This intimate and most interesting account, giving unusual sidelights on a great American engineering triumph, will prove fascinating reading to most members.

The knowledge of tides and allied natural phenomena is important to all engineers working on waterways. What controls the rise and fall; what affects the alongshore currents; details of procedure of the U. S. Coast and Geodetic Survey — these and many other valuable questions are fully treated by Commander G. T. Rude, Member, in his paper "Tides and Their Engineering Aspects."

Under the title, "Notes on Arched Gravity Dams," B. F. Jakobsen, Member, gives a mathematical analysis showing, among other things, the effects of curvature on such dams, and the desirable safeguards in designing.

The remaining ten papers of the August Proceedings were all delivered originally at the Seattle (1926) Convention of the Society, before the various technical divisions. The City Planning Division considered several phases of municipal development, covering both the design and the revision of street plans. The titles of these papers are: "Preparing the Ground Work for a City: The Regrading of Seattle, Washington," by Arthur H. Dimock, Member; "Re-Arrangement of a Business District: Changes in Recent Years in Pittsburgh, Pa.," by Nathan Schein, Member; and "The Planning of the Industrial City of Longview, Wash-

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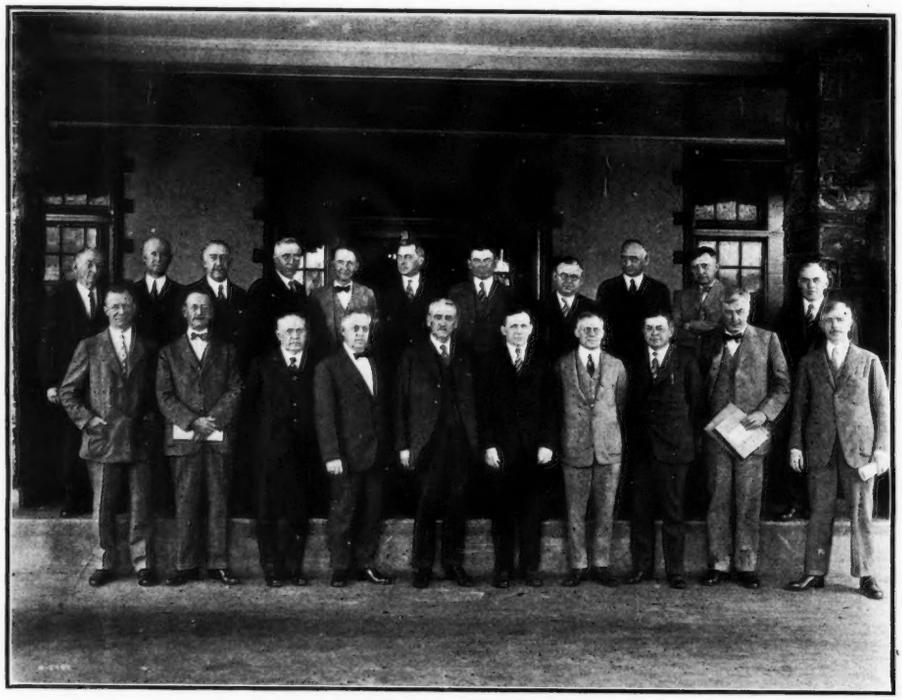

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"The Board"

A fair, but none-too-excellent-when-reduced-as-much-as-here-necessary, photograph of the Board of Direction, as it met at Asheville, is available through the courtesy of Mr. Charles E. Waddell's photographic friend, who also, by the way, furnished the artistic pictures which embellished the program.

Only four members of the Board were absent from the meeting.

Heavy Mail

THE last two weeks of March was a busy time for the mailing department of the office staff. Something like 70,000 pieces of miscellaneous mail received their attention.

The Year Book is printed in Baltimore, but 12,000 containers were addressed in the office. The same is true of 16,000 copies of "Aims and Activities" for 1927. 12,000 copies of the April Proceedings, Part I, were addressed, 5,000 additional copies of Part II being shipped to the Student Chapters. 2,600 Employment Bulletins similarly went to the Student Chapters. 12,100 copies of the Spring Meeting program were addressed and mailed. 6,800 circulars to the Technical Divisions, notices in regard to dues, copies of the Code of Ethics, certificates, reprinted paper, etc., were mailed, and the sheaf of daily letters totaled about 3,500 during the period.

Foci

APPROXIMATELY a year ago a study was made to determine the center of membership of the Society, and it was found to be at Advance, Illinois, perhaps a fortuitous omen.

Zone I, with its large membership massed in New York City, although it includes all of New York State, all of New England and of Canada east of the middle of Lake Erie, none the less had its center of membership only about 60 miles to the northeast of New York.

Zone II membership centered at Appomattox, in Virginia; Zone III membership centered at Peking, Illinois; and, as nearly as can be, the center of Zone IV was Zion Park, or maybe it would be Cedar Brakes.

Miscellany

THE program of the Twentieth Commencement of Carnegie Institute of Technology makes specific mention under "Prizes" of the fact that Gabriel O. Wessernauer was awarded Junior membership in the Society by the "American Society of Civil Engineers, Pittsburgh Section."

Dr. Edward Dean Adams, who recently attended the 500th anniversary of the founding of the University of Louvain, at Brussels, cabled on July 1st: "Planting four Sequoia seedlings representing societies (i. e. the four Founder Societies) near new engineering building."

Information has been received that "an elderly gentleman giving the name of 'Armstrong' and representing himself as having his home in some city where he could name prominent members of the Society, is soliciting funds in small amounts. Naturally, he puts up a hard luck story, which, however, is said to be somewhat overdone."

There are several members of the Society bearing the name "Armstrong," but none of these, of course, is in the dire straits in which this man pictures himself.

Again this year the Employment Service Bulletin of "Positions Open" was sent to the graduating members of the Student Chapters. Twelve issues, beginning with March 12th, were sent, the total number of copies being 16,324.

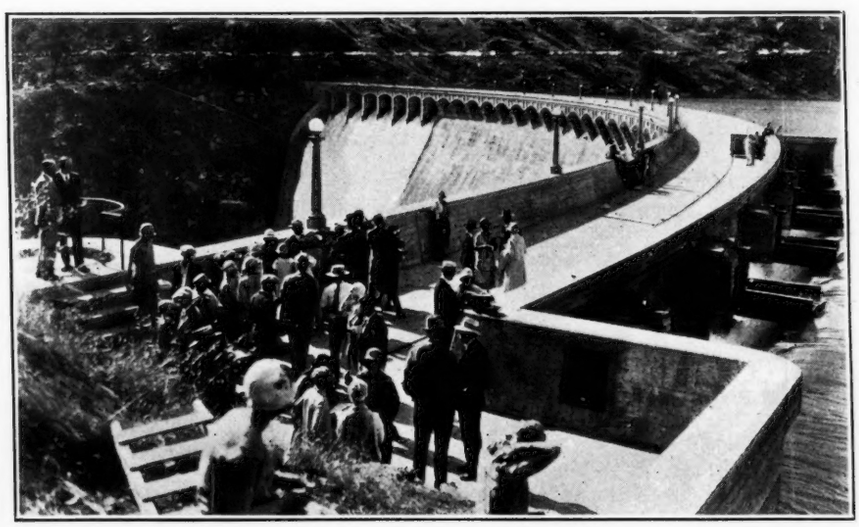
The May issue told of Past-President Desmond FitzGerald, recently deceased, having in his collection of paintings, one by Winslow Homer, entitled, "The Portage," and which was to be sold with others of the collection at the American Art Galleries.

"The Portage" sold for $15,700 and newspaper accounts of the sale say: "The price is believed the highest ever paid at public or private sale for a painting in the lighter-than-oil medium on paper." A total of $138,955 was realized from the two-day sale of paintings. Mr. FitzGerald's collection of porcelains was disposed of at a separate sale.

At varying intervals after commencement each year news drifts in quite casually that "So-and-so" of our members has received the degree of Doctor of Engineering at "Such-a-place."

Four are known to have received it this year but, as quite certainly this is not the entire number, why print an incomplete list?

The President of the Society, and the Secretary, en route to the Asheville Meeting and subsequently, visited the Local Sections (or Student Chapters) at Philadelphia, Washington, Columbus, Cleveland, Detroit, Purdue, Urbana, and Chicago. The Secretary has also visited those at Iowa City and Dayton.



Exchequer Dam and Lake McClure showing location of bronze tablet in parapet wall

Lake McClure

A bronze slab was recently (June 26) set in the parapet wall surmounting the new Exchequer Dam on the Merced River in California. It tells this story:

LAKE McCLURE

Named by

MERCED IRRIGATION DISTRICT

In Honor of

WILBUR FISK McCLURE

1857-1926

STATE ENGINEER
1912-1926

In Appreciation
Of His Lovable Character and in Recognition of His Engineering Service in the Advancement of Irrigation in California

"HE BROUGHT WATER TO THE THIRSTY LAND"

Erected by His Fellow Members of the Sacramento Section
American Society of Civil Engineers

The true engineer can ask nothing finer than that his works should thus live after him and receive a meed of praise at the hands of his fellows.

August Proceedings

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ington," by S. Herbert Hare, a landscape architect of Kansas City, Mo.

Considering the vast amount of surfaced roads in the United States without bituminous or other treatment, the engineering questions involved in these types of construction are important. They are fully treated in the paper, "Modern Crushed Stone and Gravel Surfacing," by J. W. Hoover, Washington State Highway Engineer, before the Highway Division. In a second paper before this same Division, "Relation of Road Type to Tire Wear," O. L. Waller and H. E. Phelps, Members, review studies they have made showing the effects on rubber tires of

speed, temperature, surfacing, position (front or rear), and other factors.

The Sanitary Engineering Division listened to three papers describing conditions on the Pacific Coast. "Stream Pollution in the Pacific Northwest," by the late William F. Allison, Member, described the problems peculiar to that locality due to its local industries, not the least of which is the fishing business, a vitally interested party. The remaining papers dealt with sanitary work in and around Los Angeles, under the titles "The Sewage Disposal Problems of Los Angeles, California," by W. T. Knowlton, Member, and "The Work of the Los Angeles County (California) Sanitation Districts," by Albert K. Warren, Associate Member. These papers describe problems of some similarity, but differing in scope, as one deals with a municipality and the other, with several suburban sanitation districts.

The papers before the Waterways Division involved projects of local, yet general, engineering value. "The Lake Washington Ship Canal," as described by W. J. Barden, and A. W. Sargent, Members, is an important enterprise connecting Puget Sound with a series of fresh-water lakes. Both construction and operation are described. "The Work of the Port of Seattle, Washington," is fully reviewed by George F. Cotterill, Civil Engineer and Port Commissioner of Seattle. Many historic and economic facts are given, including tabular data illustrating the scope and commercial activity of this important seaport.

Concluding the August Proceedings, there are discussions by 46 engineers on 10 papers previously published by the Society; and memoirs of 14 deceased members.

Washington Monument

(*Continued from page* 1)

The work had progressed slowly but surely until 1854 when an incident occurred that created much indignation and public discussion throughout the country. A stone which had been sent by the Pope was stolen, and no trace of it ever was found. So disturbing was this act of vandalism that the collection of public contributions ceased and with it construction work on the monument, which was then 150 ft. high.

Not for twenty-two years, or until 1876, was work resumed and then it was to make a fresh start, beginning again literally at the very bottom. It had been decided to underpin the foundation, as even with height reduced from the anticipated 600 ft. to a recommended height of 500 ft., the area of the foundation was considered insufficient to prevent excessive pressure on the soil.

The original foundation, 80 ft. square at its base and 23 ft. 4 in. deep was composed of blue gneiss blocks of 6 to 8 tons each, laid as rubble in mortar of hydraulic cement, stone, lime, and sand. The new foundation was to consist of a concrete sub-foundation 13 ft. 6 in. thick extending in under the old rubble for a distance of 18 ft. and outside for 23 ft. 3 in., giving a total bearing surface of 16,000 square feet as compared with the original 6,400 square feet.

The undercutting necessitated the removal of 70 per cent of the area of the earth upon which the monument was standing and was accomplished with a settlement of a little more than 2 inches at one of the corners, but without cracking or the opening of a joint in the 150 ft. of completed shaft.

A second step in the strengthening of the foundation consisted of the removal piecemeal of the flare of the original rubble foundation and the substitution of a still more flaring continuous concrete buttress. This buttress by careful manipulation was also made to extend somewhat inside the lines of the shaft, permitting the removal of almost exactly half the original foundation and, at the same time, more ideally transmitting the weight of the shaft to the new and larger base.

Like so many achievements of the civil engineer, this work, essential to the security and integrity of the thing of beauty that all who see admire, is hidden below ground and forgotten, and yet without it the other could not be.

Work was resumed on the shaft in 1880. Its final height is 555 ft. 5⅛ in. The monument was dedicated in 1885 and opened to the public, October 9, 1888.

NOTE.—*Acknowledgement is due The Society of Military Engineers, which has published a pamphlet that formed the basis for this article.*

Turned Down

THE question has often been asked, "How many applicants are turned down?" More especially recently, since applications have been so numerous, members more interested in quality than in quantity have put the query.

A study of the past ten years, during which there has been no change in the constitutional requirements, indicates, however, no real change in the interpretation of these requirements. Throughout that period they have been considered as "minimum."

Individual years differ somewhat, but taking the average for the ten years it is found that 13.0% of all applications are refused. For the last five years the percentage is 12.4, but for the year 1926 those applying and declined were 13.5% of the total.

In addition, of course, a considerable number are rated by the Board at a lesser grade of membership than they rate themselves. But these are not "turned down," merely "turned lower." In other words, the higher membership is deferred for the time. Most of these men accept the Board's judgment—and, later transfer.

Why Is a Committee?

A MEMBER in Los Angeles sent in "Sparks," the "organ of the Electric Club," with the following marked item:

"WHY IS A COMMITTEE?"

"But first, what is a committee?" A committee is a relatively small number of members of an organization which undertakes to perform a certain service for or on behalf of the whole organization.

"Often a committee appointment is regarded as an honor.

"But it isn't. Committee service is a job.

"Committees are appointed in the confidence that the functions for which the committee was created will be performed, faithfully and well. In accepting committee duty, the member gives his virtual promise that he will 'do his stuff'.

"When a committee fails to percolate, it has done a double injury to its organization. It leaves the work undone, in the first place, and stands in the way of any one else doing the work, in the second place. And to this may be added the blighting effect on the morale of the membership which results whenever the program of the organization is hindered or the obligations of officers and committees treated as of little importance and no binding quality.

"Fellow members, when you accept official or committee obligation, in heaven's name, make good! Do the job, if possible. If you find that you can't, then step aside and clear the way for some one else.

"To fall down on the job is lamentable; but to lie down on the job is shameful and inexcusable."